



# Forest Insect & Disease Management

Project Report

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## PILOT CONTROL PROJECT WITH PYRETHRIN TO ELIMINATE RHYACIONIA ADANA, MICHIGAN, 1974

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### INTRODUCTION

In September 1973, the Michigan Department of Agriculture notified the Forest Service, Toumey Nursery, Watersmeet, Michigan, that red pine certification would be withheld because of an infestation of a tip moth, Rhyacionia adana (Heinrich). A survey of seedbeds in October 1973 showed about 11% of the 3-0 seedlings were infested. Since moth emergence and egg deposition occurs at about the time of tree lifting operations, the period of moth flight would be the first opportunity to initiate action to control the pest. No insecticide is registered to control this insect.

### OBJECTIVE

The objective of the pilot control project was to eliminate R. adana moths from nursery seedbeds and to obtain data to support registration of the treatment used.

### METHODS

Insecticide: Pyrethrin<sup>1/</sup> was selected because it is safe for handlers of seedlings during sorting, packing and planting activities. One gallon of concentrate (1.8 oz active ingredient) per 100 gallons of water was applied by a tractor-mounted spray boom equipped with Tee Jet 8008 flat fan nozzles. The application rate was 88 gallons of mixed spray per acre at 150 psi pump pressure.

Timing: Treatment was made at the first appearance of moths, and daily until three days after the last moth sighting.

<sup>1/</sup>Pyrocide Stabilized Growers Spray 7083. McLaughlin Gormley King Co., 8810-10th Ave. No., Minneapolis, MN 55427.



R. adana pupal case on red pine approximately one inch below soil line.



Nine applications were made from April 25 through May 4 in late afternoon or early evening, except on April 30 when it rained.

Evaluation: Efficacy of control was determined by the presence or absence of eggs on the needles in mid-May. Samples were taken at random for 1-0 and 2-0 beds.

## RESULTS AND CONCLUSIONS

A total of 614 red pine were examined for R. adana eggs. Of these, 9.6 percent of the 2-0 trees and 1.6 percent of the 1-0 trees were infested.

Results of survey for R. adana eggs following pyrethrin applications, May, 1974:

Tree Samples		No. Trees Examined by Age Class					
Block	Unit	2-0		1-0		Eggs	Eggs
		Eggs	No Eggs	Eggs	No Eggs		
1	1	0	60				
1	1	0	44				
2	1			0	25		
2	2	0	50				
2	3	6	54				
4	1	1	87				
4	2			0	25		
4	3	34	67	0	25		
5	1	0	42				
5	2			0	25		
5	3	2	42				
5	3			2	23		
		43	446	2	123		

The results show repeated applications of pyrethrin failed to eliminate the R. adana egg population. No application for registration was initiated.

## PESTICIDE PRECAUTIONARY STATEMENT

*This publication reports the evaluation of pesticides. It does not contain recommendations for their use, nor does it imply that the uses discussed here have been registered. All uses of pesticides must be registered by appropriate State and/or Federal agencies before they can be recommended.*

**CAUTION:** Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or other wildlife--if they are not handled or applied properly. Use all pesticides selectively and carefully. Follow recommended practices for the disposal of surplus pesticides and pesticide containers.

